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# PATENT ABSTRACTS OF JAPAN

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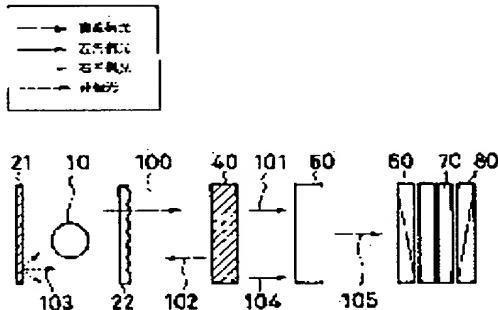
(22) Date of filing : 23. 07. 1993 (72) Inventor : HIJI NAOKI  
YAMAMOTO SHIGERU  
KYOZUKA SHINYA

## (54) BACK LIGHT SOURCE

### (57) Abstract:

**PURPOSE:** To obtain a direct view type back light source which has high luminance and superior uniformity of luminance by arranging a reflection plate which scatters light, a light emission body, a planar oriented cholesteric liquid crystal layer, and a 1/4-wavelength plate in this order.

**CONSTITUTION:** The back light source consists of a diffusing reflection plate 21 which scatters light, a planar oriented cholesteric liquid crystal layer 40, a light emission body 10 which is arranged between the diffusing reflection plate 21 and liquid crystal layer 40, a light-transmissive diffusing plate 22 which is arranged between the light emission body 10 and liquid crystal layer 40, and the 1/4-wavelength plate 50 which is arranged on the light transmission side of the liquid crystal layer 40. A circular polarized light component 102 which is reflected by the CH liquid crystal layer 40 is irregularly reflected at the time of reflecting by the diffusing reflection plate 21 and partial polarization is eliminated; and its reflected light 103' is partially polarized light, but its polarized component 104 can be transmitted through the CH liquid crystal layer 40. Namely, 75% of the light emitted by the light emission body 10 is transmitted through the CH liquid crystal layer 40 and guided to a liquid crystal cell 70 to improve the luminance.



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